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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/772,653

02/05/2004

Mohammed Mahbubur Rahman

WJT08-0060

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(JSF001-0009)

7590

03/21/2005

EXAMINER

HAM, SEUNGSOOK

James S. Finn

8650 Southwestern Blvd. #2825

Dallas, TX 75206-2688

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EF

Office Action Summary	Application No.		Applicant(s)	
	10/772,653		RAHMAN ET AL.	
	Examiner		Art Unit	
	Seungsook Ham		2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 22-71 is/are pending in the application.
- 4a) Of the above claim(s) 8,9,28,36,37,55,58 and 59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,10-20,22-27,29-35,38-54,56,57 and 60-71 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/7/05, 2/5/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Species I in the reply filed on 2/7/05 is acknowledged.

Claims 8, 9, 28, 36, 37, 55, 58 and 59 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species II and III, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 2/7/05.

It should be noted that claim 55 is withdrawn from the further consideration since it is unclear as to which embodiment shows such limitation. If the applicant believes that the claim 55 should be considered with the elected Species I, the applicant is required to provide where in the specification and/or drawings describes such limitation.

Moreover, the applicant suggested that claims 1-7 and 12-28 are read on the elected species I. However, upon further review, the examiner included other claims that is related to the elected Species I.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the subject matter of claims 7, 35, 57 ("a transmission line") and the subject matter of claims 22, 50, and 69, ("a metallic electrode with ... associated with at least one resonator") must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The abstract of the disclosure is objected to because the abstract should be limited to a single paragraph. Correction is required. See MPEP § 608.01(b).

The attempt to incorporate subject matter into this application by reference to US patent application 09/457,943 is improper because essential material may not be incorporated by a pending US application. The examiner suggested changing the US application number to US Patent Application Publication no. 2002/0186099.

The disclosure is objected to because of the following informalities:

The specification contains various typographical errors. The examiner requests to correct the errors accordingly. For example, p. 8, line 19, “;” should be corrected to --.--; p. 12, line 2, “Resisters” should be corrected to –Resistors--; p. 12, line 9, “2A” should be corrected to –2--, etc..

Appropriate correction is required.

Claim Objections

Claims 23 and 56 are objected to because of the following informalities:

claim 23 is dependent on a missing claim 21. It should be noted that the original claims do not have claim 21. The examiner suggested to renumbered claims (by Amendment) in the next response.

In claim 56, last line, “;” should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7, 12, 13, 16, 24, 35, 40, 41, 44, 50, 51, 57, 64, and 70 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 12, line 7, “said variable capacitors” lacks antecedent basis.

In claims 16, 44 and 64, “wherein in any or all of said resonators DC blocking capacitor...” cannot be understood.

In claim 24, “the varactor” lacks antecedent basis.

Art Unit: 2817

In claims 7, 35, and 57, "the cross coupling **mechanism**" lacks antecedent basis.

In claim 41, "said biasing lines" lacks antecedent basis (claim 41 should be dependent on claim 40 instead of claim 29).

In claim 50, "the metallic electrode" lacks antecedent basis (it appears that claim 50 should be dependent on claim 49 instead of claim 48).

In claims 51 and 70, "the varactor" lacks antecedent basis.

In claim 40, "said variable capacitor" lacks antecedent basis.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 2, 4-6, 10-14, 16, 18-20, 22-27, 29, 30, 33-34, 38-42, 44, and 46-54 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of copending Application No. 10/051,144. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims are the same except in semantics.

Art Unit: 2817

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 3, 15, 17, 31, 43, 45, 56, and 60-71 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of copending Application No. 10/051,144 in view of Liang et al. (US Pat. Appl. Pub. '719).

The instant claims are the same except the second resonator is a ring-type resonator. However, ring-type resonator is well known in the art. Liang et al. (figs. 2 and 3) discloses a well known ring-type resonator. It would have been obvious to one of ordinary skill in the art to provide a ring-type resonator as the second resonator in the device of the copending claims since combline-type and ring-type resonators are functionally equivalent. It should be noted that a ring-type resonator has bent portions.

This is a provisional obviousness-type double patenting rejection.

Claims 7 and 35 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of copending Application No. 10/051,144 in view of Peters (US '259).

The instant claims are the same except the transmission line/cross coupling mechanism is shorted on both ends. Peters (fig. 7) discloses a filter having a short-circuited transmission line 309 coupled to first and third resonators. It would have been obvious to one of ordinary skill in the art to short-circuit the transmission line ("means for coupling non-adjacent ones of the resonators", see copending claim 1) in the device

Art Unit: 2817

of copending claims to adjust the zeroes of the filter in a passband as taught by Peters (col. 7, line 57 – col. 8, line 4).

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 4-6, 10-14, 16, 18-20, 22-27, 29, 30, 33-34, 38-42, 44, 46-54, 56, 60-62, 64, and 66-71 are rejected under 35 U.S.C. 102(e) as being anticipated by Shamsaifar et al. (US Pat. Appl. Pub. '820).

See Obviousness-type Double Patenting Rejection above.

Claims 1, 2, 4-7, 14, 22, 29, 30, 32-35, 42, and 49 are rejected under 35 U.S.C. 102(e) as being anticipated by Peters (US '259).

Peters (fig. 7) discloses a stripline filter comprising: first and third combline-type resonators 308a, 308b; a second resonator 306 coupled to both first and third resonators; input and output transmission lines 307a, 307b, connected to the first and third resonators, respectively; and the third and first resonators are cross coupled by a transmission line shorted on both ends 309 (the coupling electrode 309 connected to a

Art Unit: 2817

ground electrode 303). The preamble, "A voltage-controlled tunable comb-ring type filter" in claims 1 and 29, cannot be given any patentable weight since the body of the claim does not recite such structure.

Regarding claims 22 and 49 (insofar as understood), Peters (fig. 7) also shows a metallic electrode 310a distance associated with at least one resonator 308b.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-7, 14, 29, 30, 32-35, and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyazaki et al. (US '073).

Miyazaki et al. (fig. 26) discloses a stripline filter comprising: first and third combline-type resonators 10a, 10d; a second resonator 10b, 10c coupled to both first and third resonators; input and output transmission lines 17, connected to the first and third resonators, respectively (see fig. 21, the input/output line 17 is connected to first resonator through electrode 14); and the third and first resonators are cross coupled by a transmission line shorted on both ends 19 (the electrode 16 are connected to the outer ground electrode). The preamble, "A voltage-controlled tunable comb-ring type filter" in claims 1 and 29, cannot be given any patentable weight since the body of the claim does not recite such structure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2817

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 15, 17, 31, 43, 45, 56, and 60-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shamsaifar et al. (US Pat. Appl. Pub. '820) in view of Liang et al. (US Pat. Appl. Pub. '719).

See Obviousness-Type Double Patenting Rejection above.

Claims 7 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shamsaifar et al. (US Pat. Appl. Pub. '820) in view of Peters (US '259).

See Obviousness-Type Double Patenting Rejection above.

Claims 3, 10-13, 15-20, 23-28, 31, 38-41, 43-48, 56, 57, and 60-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters (US '259) in view of Liang et al. (US Pat. Appl. Pub. '719).

Peters is applied as above. Peter lacks providing a ring-type resonator as the second resonator and at least one voltage-controlled variable capacitor is coupled to a resonator.

It should be noted that providing a voltage-controlled variable capacitor coupled to a resonator/filter to tune a resonant/filter frequency is well known in the art. Liang et al. (figs. 2 and 3) discloses a ring-type resonator coupled to a voltage-controlled variable capacitor. Liang et al. (figs. 8 and 9) also shows different types of voltage-controlled variable capacitor (e.g., MEM varactors, tunable dielectric capacitor, etc.).

It would have been obvious to one of ordinary skill in the art to provide a voltage-controlled ring-type resonator of Liang et al. as the second resonator in the device of

Art Unit: 2817

Peters since a ring-type resonator and a combline resonator are functionally equivalent, and also to tune a resonant/filter frequency as taught by Liang et al.

Claims 3, 10-13, 15-20, 22-28, 31, 38-41, 43-54, 56, 57, and 60-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki et al. (US '073) in view of Liang et al. (US Pat. Appl. Pub. '719).

Miyazaki et al. is applied as above. Peter lacks providing a ring-type resonator as the second resonator and at least one voltage-controlled variable capacitor is coupled to at a resonator.

It should be noted that providing a voltage-controlled variable capacitor coupled to a resonator/filter to tune a resonant/filter frequency is well known in the art. Liang et al. (figs. 2 and 3) discloses a ring-type resonator coupled to a voltage-controlled variable capacitor. Liang et al. (figs. 8 and 9) also shows different types of voltage-controlled variable capacitor (e.g., MEM varactors, tunable dielectric capacitor, etc.).

It would have been obvious to one of ordinary skill in the art to provide a voltage-controlled ring-type resonator of Liang et al. as the second resonator in the device of Miyazaki et al. since a ring-type resonator and a combline resonator are functionally equivalent, and also to tune a resonant/filter frequency as taught by Liang et al.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Makimoto et al. (US '182) discloses a tunable ring-type resonator;

Sasaki et al. (US '866, fig. 6) discloses a plurality of resonators having bent portions; and

McVeety (US '454) disclose a stripline filter having a cross coupling means.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seungsook Ham whose telephone number is (571) 272-2405. The examiner can normally be reached on Monday-Thursday, 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Seungsook Ham
Primary Examiner
Art Unit 2817

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